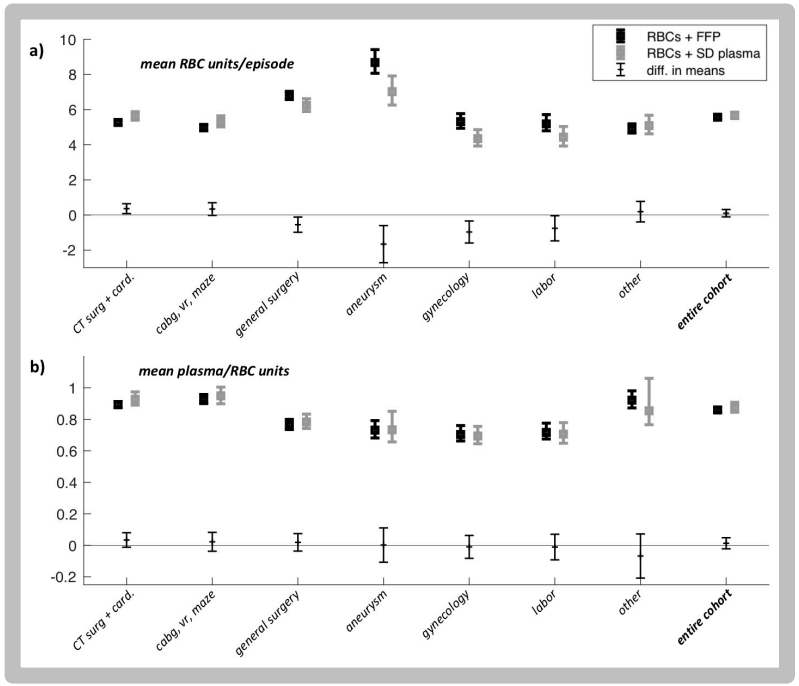

Comparing clinical use, effectiveness, and risks across transition from fresh frozen plasma (FFP) to solvent/detergent (SD) plasma in the Netherlands

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Indications for plasma transfusion

- Replenishment of plasma coagulation proteins (e.g. surgery, liver disease)
- Removal of an insulting entity via plasma exchange (e.g. TTP/HUS)

Clinical condition	GoR
1. Correction of congenital or acquired deficiencies of clotting factors (for which there is not a specific concentrate), when the PT or aPTT ratio is >1.5:	
- Liver disease:	
- *active bleeding*	1C+
- *prevention of bleeding in the case of surgery or invasive procedures*	2C
- During treatment with vitamin K antagonists (if prothrombin complex, which is the first choice treatment, is not available):	1C+
- *in the presence of major or intracranial haemorrhage*	
- *in preparation for surgery than cannot be delayed*	
- Acute disseminated intravascular coagulation with active bleeding, in association with correction of the underlying cause	1C+
- Microvascular bleeding during massive transfusions (>1 blood volume), even before the results of PT and aPTT	1C+
- Deficiencies of single clotting factors, in the absence of specific concentrates (e.g. of FV), in the presence of active bleeding or to prevent bleeding during an invasive procedure	1C+
2. Apheretic treatment of thrombotic microangiopathies (thrombotic thrombocytopenic purpura, haemolytic-uraemic syndrome, HELLP syndrome), as a replacement fluid	1A
3. Reconstitution of whole blood for exchange transfusions	2C
4. Hereditary angioedema in the case that C1-esterase inhibitor is not available	2C+

Liumbruno, G., Bennardello, F., Lattanzio, A., Piccoli, P., & Rossetti, G. (2009). Recommendations for the transfusion of plasma and platelets. Blood Transfusion, 7(2), 132–50.

Potential side-effects of plasma transfusion

- Allergic/anaphylactic reactions
- Non-hemolytic febrile reactions
- Acute hemolytic reactions
- Delayed hemolytic reactions
- Post-transfusion bacteremia
- Transfusion Related Acute Lung Injury (TRALI)
- Transfusion Associated Circulatory Overload (TACO)

Plasma types

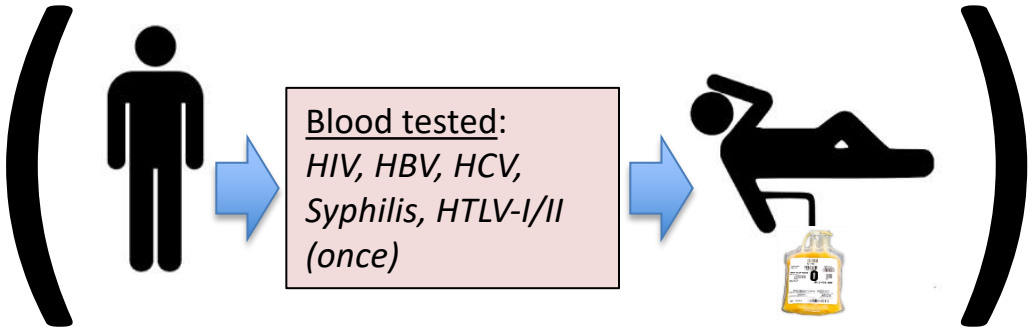
Quarantined Fresh Frozen Plasma (Q-FFP)

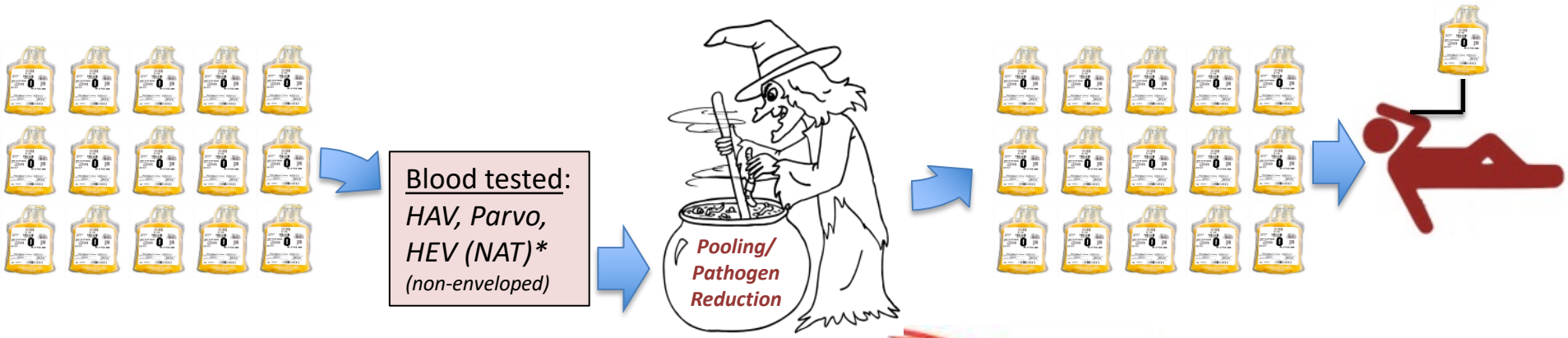
- Apheresis plasma from one donor placed in quarantine for 4-6 months
- Donor screened for various diseases
- Re-tested six months later
- Plasma unit is used following clear second screen
- Plasma stored frozen up to two years

Plasma types

Solvent/Detergent treated pooled Plasma (SDP) – e.g. Omniplasma™

- Plasma from ~1000 donors pooled
- Pathogen reduction process performed on pool
- Pool separated into units





The switch

- On January 1, 2014, the Netherlands switched from FFP to SD plasma
- Expectations were a reduction in the risk of allergic reactions and TRALI
- **SD plasma units are smaller than FFP units (200mL vs. ~330mL)**

- Observational cohort study to compare clinical **use, effectiveness, and transfusion reaction risk** for the two products
- Changes in clinical use patterns with the switch to the smaller plasma units?

FROSTED study…

FROSTED study – results

Article currently in preparation for submission to peer-reviewed journals – results to be made available following publication

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